Amendments to the claims:

This listing of claims will replace all prior versions and listing of claims in the application.

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Currently Amended) A method of measuring a DUT comprising the steps of:

providing a vector network analyzer having at least two measurement ports,

measuring a reflection characteristic of a high reflect calibration standard at each measurement port,

measuring forward and reverse reflection and transmission characteristics of a line calibration standard,

measuring forward and reverse reflection and transmission characteristics of a source terminated thru calibration standard,

measuring forward and reverse reflection and transmission characteristics of a locally terminated thru calibration standard,

calculating error coefficients for said at least two measurement ports based upon results in said steps of measuring,

calculating a shifted electrical length attributable to said calibration standards based upon results in said steps of measuring,

connecting the DUT to the measurement ports,

measuring s-parameters at the measurement ports,

correcting for systematic errors in said s-parameters based upon said error coefficients to yield a corrected S-parameter matrix, and

shifting a reference plane for each element of said corrected S-parameter matrix to coincide with a measurement reference plane

wherein a shifted electrical length between said indirect pairs is calculated using load match and source match error coefficient terms, and

~~A method of measuring as recited in claim 3~~

$$\frac{\Gamma_{SA\_portm}}{\Gamma_{LA\_portm}} = S_{21\_thru\_nm} S_{12\_thru\_nm}$$

wherein $S_{21\_thru\_nm}$ is equal to $S_{12\_thru\_mn}$ and an argument of both solutions for $S_{21\_thru\_nm}$ is fit to a straight line, the solution having a y-

intercept closest to zero being ~~the~~ a correct solution and ~~the~~ a resulting argument of the correct solution being the electrical delay.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Currently Amended) A method of measuring a DUT comprising the steps of:

providing a vector network analyzer having at least two measurement ports,

measuring a reflection characteristic of a high reflect calibration standard at each measurement port,

measuring forward and reverse reflection and transmission characteristics of a line calibration standard,

measuring forward and reverse reflection and transmission characteristics of a source terminated thru calibration standard,

measuring forward and reverse reflection and transmission characteristics of a locally terminated thru calibration standard,

calculating error coefficients for said at least two measurement ports based upon results in said steps of measuring,

calculating a shifted electrical length attributable to said calibration standards based upon results in said steps of measuring,

connecting the DUT to the measurement ports,

measuring s-parameters at the measurement ports,

correcting for systematic errors in said s-parameters based upon said error coefficients to yield a corrected S-parameter matrix, and

shifting a reference plane for each element of said corrected S-parameter matrix to coincide with a measurement reference plane,

measuring forward and reverse reflection and transmission characteristics of a source terminated thru calibration standard for indirect pairs of said measurement ports,

wherein the step of calculating further comprises calculating a different respective shifted electrical length for each said direct and indirect pair, and

wherein said shifted electrical length between proximal pairs is determined by averaging

a shifted electrical length between said direct pair and said indirect pair having respective proximal pair measurement ports in common.

9. (Cancelled)

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Currently Amended) A method of measuring a DUT comprising the steps of:

providing a vector network analyzer having at least two measurement ports,

measuring a reflection characteristic of a high reflect calibration standard at each measurement port,

measuring forward and reverse reflection and transmission characteristics of a line calibration standard,

measuring forward and reverse reflection and transmission characteristics of a source terminated thru calibration standard,

measuring forward and reverse reflection and transmission characteristics of a locally terminated thru calibration standard,

calculating error coefficients for said at least two measurement ports based upon results in said steps of measuring,

calculating a shifted electrical length attributable to said calibration standards based upon results in said steps of measuring,

connecting the DUT to the measurement ports,

measuring s-parameters at the measurement ports,

correcting for systematic errors in said s-parameters based upon said error coefficients to yield a corrected S-parameter matrix, and

shifting a reference plane for each element of said corrected S-parameter matrix to coincide with a measurement reference plane, and

determining a type of high reflect calibration standard, comprising

~~A method of measuring as recited in claim 12 wherein said step of determining further comprises~~ calculating a characteristic of said high reflect calibration standard, fitting arguments of two possible solutions for said

characteristics to a straight line, identifying ~~which~~ a solution ~~is~~ closest to zero phase at DC.

14. (Cancelled)

15. (Cancelled)

16. (Currently Amended) A method of measuring a DUT comprising the steps of:

providing a vector network analyzer having more than two measurement ports,

measuring a reflection characteristic of a high reflect calibration standard at each measurement port,

measuring forward and reverse reflection and transmission characteristics of a line calibration standard for direct pairs of the measurement ports,

measuring forward and reverse reflection and transmission characteristics of a source terminated thru calibration standard for indirect pairs of the measurement ports,

measuring forward and reverse reflection and transmission characteristics of a locally terminated thru calibration standard for the indirect pairs,

calculating error coefficients for said at least two measurement ports based upon results in said steps of measuring,

calculating a shifted electrical length attributable to said calibration standards based upon results in said steps of measuring for each direct and indirect pair,

connecting the DUT to the measurement ports,

measuring s-parameters at the measurement ports,

correcting for systematic errors in said s-parameters based upon said error coefficients to yield a corrected S-parameter matrix, and

shifting a reference plane for each element of said corrected S-parameter matrix to coincide with a measurement reference plane comprising modifying an argument of respective S-parameters according to respective ones of the shifted electrical lengths comprising

~~A method of measuring as recited in claim 15 wherein said step of shifting a reference plane comprises~~ adjusting each ~~said~~ element of said corrected S-parameter matrix according to:

$$S_{dut} = |\rho| e^{-j(\theta_0 + \delta\theta(f))}$$

wherein $\delta\theta$ is calculated from said electrical

length as a function of frequency.

17. (Currently Amended) A method of measuring a DUT comprising the steps of:

providing a vector network analyzer having at least two measurement ports,

measuring a reflection characteristic of a high reflect calibration standard at each measurement port,

measuring forward and reverse reflection and transmission characteristics of a line calibration standard,

measuring forward and reverse reflection and transmission characteristics of a source terminated thru calibration standard,

measuring forward and reverse reflection and transmission characteristics of a locally terminated thru calibration standard,

calculating error coefficients for said at least two measurement ports based upon results in said steps of measuring,

calculating a shifted electrical length attributable to said calibration standards based upon results in said steps of measuring by ~~A method of measuring as recited in claim 1 wherein said step of calculating a shifted electrical length comprises~~ calculating a characteristic of

said high reflect calibration standard, fitting an argument of said characteristic to a straight line, and using a slope of said straight line to calculate a shifted electrical length,

connecting the DUT to the measurement ports,

measuring s-parameters at the measurement ports,

correcting for systematic errors in said s-parameters based upon said error coefficients to yield a corrected S-parameter matrix, and

shifting a reference plane for each element of said corrected S-parameter matrix to coincide with a measurement reference plane.

18. through 72. (Cancelled)